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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,552	07/08/2003	Ian Robert Appelbaum	129-001	9049
7590 03/06/2006				
James Marc Leas 37 Butler Drive S. Burlington, VT 05403		EXAMINER JACKSON JR, JEROME		
		ART UNIT PAPER NUMBER		
		2815		

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Period for Reply

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
4a) Of the above claim(s) 9,21-30,33-38,42,44-47 and 49-54 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8,10-20,31,32,39-41,43 and 48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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The disclosure is objected to because of the following informalities: page 5 "power supply 50" should be "60"; page 9 references "122" that is not present in any figure; page 10 references "132" that is not in any figure.

Appropriate correction is required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Nurmikko '725.

Nurmikko in figure 4 shows an integrated magneto-optical device comprising a light emitting portion 14 and a magnetically sensitive portion MTJ that modulates light emission from the device. Claim 1 is anticipated. Claims 2 and 3 are also rejected as the Nurmikko device can function in the manners claimed. Statements of intended use or functional language do not structurally distinguish over Nurmikko. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and

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the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Claim 4 is rejected as '725 uses a magnetically permeable material.

Claims 1-8,10,17-20,39-41,43 and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamiguchi '353.

Kamiguchi shows in figures 10-14 a bipolar transistor mode magnetoresistance device which emits light in response to the magnetic field. Applicant's broad claims reciting functional language coupled with bare structural recitations such as "light emitting portion", magnetically sensitive portion", "emitter, base , collector" labels, etc. do not structurally distinguish the claims over Kamiguchi. Note also Kamiguchi teaches Schottky contacts and tunneling current to a light emitting recombination region.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8,10-20,31,32,39-41,43, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nurmikko in view of Sato '143.

Nurmikko states that "any spin valve type device may be employed" [0028]. It would have been obvious to have practiced a bipolar type spin valve device as Sato in an integrated led/valve MOD for the advantage of greater

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collector current and hence greater light emission. Applicant's claims are broad and structurally obvious over the teachings and suggestions of the applied art to one of ordinary skill. In regard to claims reciting a "quantum well" Nurmikko's VCSEL design includes quantum well design. Again statements of intended use or functional language do not structurally distinguish over the applied art which can function in the same manner. The power supplies of the prior art can supply the required voltages for impact ionization. Note also that impact ionization is a statistical process and occurs at common voltages. There are no exact layer by layer recitations of structure in applicant's claims which would unequivocally distinguish applicant's claimed structure over the teachings of the applied art. The claims are mostly broad recitations of a "magnetically sensitive portion" and a "light emitting portion" coupled with functional language which does not structurally or functionally distinguish over the applied art.

Van Den Berg is relevant art on magnetic memory. Epstein shows polymer based spin devices integrated with a light emitter.

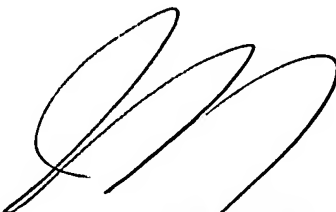
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerome Jackson Jr. whose telephone number is 571-272-1730. The examiner can normally be reached on M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 571-272-1664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jj



JEROME JACKSON
PRIMARY EXAMINER